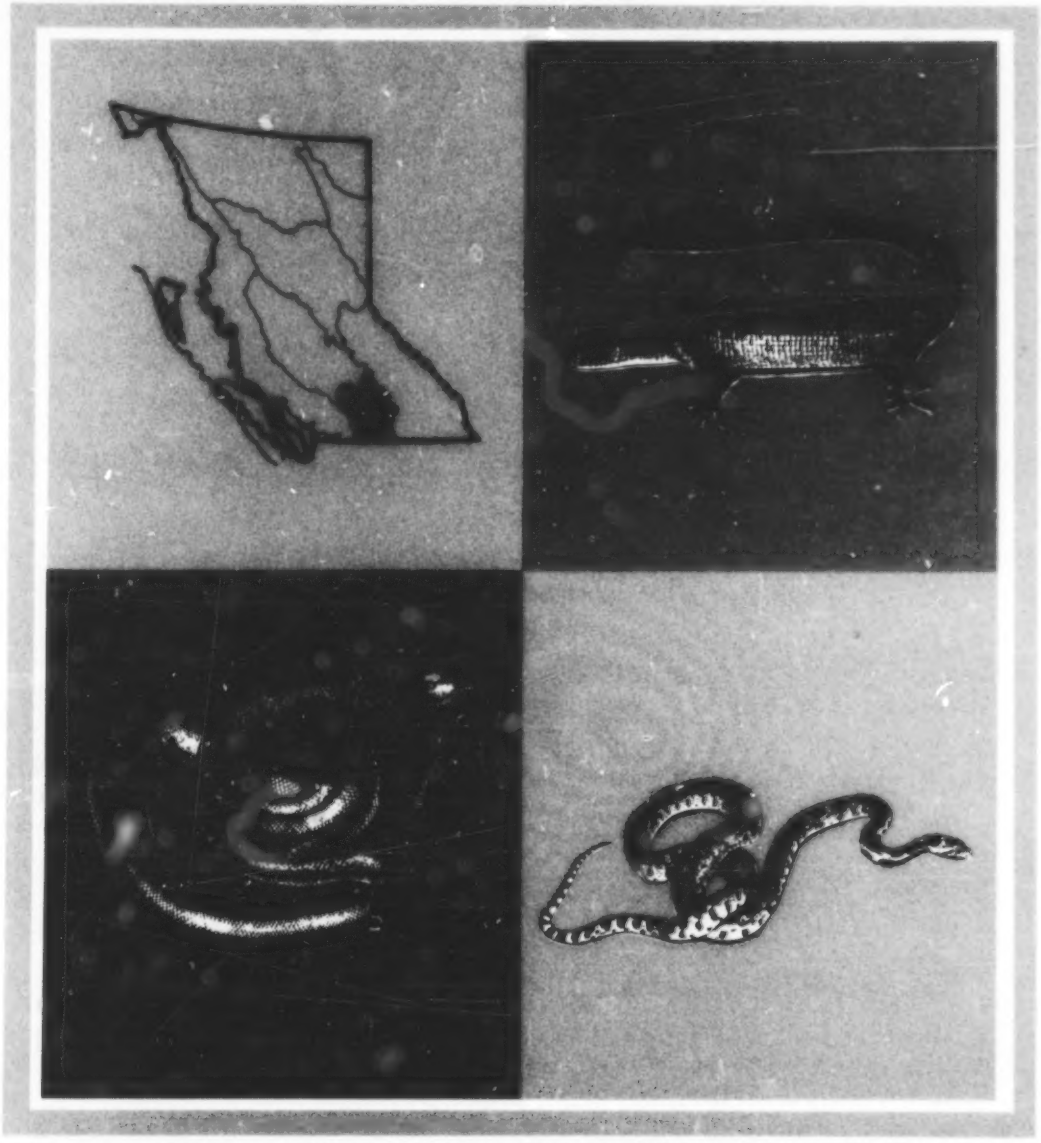
WILDLIFE HABITAT Handbook

for the Southern Interior Ecoprovince



Vol. 3 Species Notes for Reptiles

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WILDLIFE HABITAT HANDBOOKS FOR THE SOUTHERN INTERIOR ECOPROVINCE

VOLUME 3: SPECIES NOTES FOR REPTILES

Stan A. Orchard

A cooperative effort of the
Ministry of Environment (Wildlife Branch),
the Ministry of Forests (Research Branch),
and Wildlife Habitat Canada

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PREFACE

This publication is part of the series "Wildlife Habitat Handbooks of the Southern Interior Ecoprovince". The purpose of this series is to provide forest, wildlife, and range managers with the knowledge and tools to assess impacts of various land management practices on wildlife and its habitat. Basic to this assessment process is an understanding of wildlife's relationship to habitat.

The information in this series applies specifically to the Southern Interior Ecoprovince and similar ecosystems in the southern area of British Columbia. The principles and processes described, however, apply generally to all managed forests and rangelands, when the welfare of wildlife is affected by land management decisions.

The series is a comprehensive package composed of eleven separate volumes. Although each part will be an independent treatment of a specific subject, when combined in sequence, the individual parts will be as chapters in a book. The final sequence is shown on the inside back cover of this publication, but individual chapters will be printed as they become available. Though this ensures that the information will be used as quickly as possible, the order of production will not be the same as the final organized order.

"Wildlife Habitat Handbooks of the Southern Interior Ecoprovince" is a cooperative effort of the British Columbia Ministries of Environment (Wildlife Branch, Fisheries Branch), the Ministry of Forests (Research Branch), the Ministry of Municipal Affairs, Recreation, and Culture (Royal British Columbia Museum), the University of British Columbia and Simon Fraser University, and the Canadian Wildlife Service.

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The production of this report depended strongly on the access to literature and specimens provided by the Vertebrate Zoology Division of the Royal British Columbia Museum, primarily through R. Wayne Campbell and on the editorial comments provided by P. Gregory and R.W. Campbell.

Much of the information in this report was obtained from two related projects - an ecological review of amphibians and reptiles of British Columbia (Orchard 1984) and a British Columbia atlas project (Orchard, in preparation).

I would like to thank Lynne Foxall for her long-suffering patience in typing this document. Spenser Sutton of Atlas Designworks drafted the distribution maps. Illustrations were done by Keith Taylor and BrigittaM.Van Der Raay for a museum handbook on reptiles (Gregory and Campbell 1984) and gratefully used here with permission from the Royal British Columbia Museum. Other graphics were prepared by Gail Harcombe and Glenn Kubian. Tracey Hooper and Elizabeth Stanlake did much of the report formating and editing. Cover design was by Nicholas Newbeck. To all contributors, I am grateful.

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1 Introduction

1. INTRODUCTION

The major wildlife goal in British Columbia is to maintain the diversity of species. This is a difficult goal to achieve with the large number of species, habitats, and land use activities. For most species, the desired information for management is scanty, scattered, and descriptive. Thus it is difficult to predict outcomes of land use practices on habitat and on wildlife, especially with few staff, low budgets, and high rates of habitat change.

The wildlife habitat handbook project was initiated to develop planning tools to aid wildlife habitat managers in predicting consequences of management activities on habitat and therefore on wildlife. Two major premises of this handbook are:

1) most wildlife habitat will be managed indirectly by influencing other resource managers to modify their activities for the benefit of wildlife;
2) all wildlife species and their habitat requirements must be considered in the process.

This handbook system organizes biological data for various ecosystems or habitats, in a framework that assists resource managers in predicting consequences and in developing alternatives. It is based on similar approaches to species diversity management in the United States. Our approach was to begin with a pilot study in the Southern Interior Ecoprovince (see Figures 1 and 2).

The following report is the "reptile" component of the information base we call species notes [1] . These notes present knowledge of habitat requirements for terrestrial and aquatic vertebrates in a readable, understandable format. They summarize the literature describing the distribution, habitat requirements, and selected life history characteristics, from a *provincial* perspective, for the 11 reptile species occurring in the Southern Interior Ecoprovince. The notes provide the literature data-base for developing the species-habitat relationship models that will indicate suitability values for wildlife species for each major wildlife habitat.

The species notes were compiled with an emphasis on information specific to British Columbia. The main source of information was the literature collected at the Royal British Columbia Museum for the reptile bibliography (Campbell *et al.* 1982). An extensive search of the information collected by the museum up to September 1984 was conducted. Since many species are not adequately covered in British Columbia studies, we used information from general reptile texts along with other literature relevant to the Pacific Northwest. Some general texts are listed in Appendix 5.2. Additional information was provided by biologists who reviewed notes on species within their area of expertise (see Acknowledgements).

The species notes are starting points for information on the habitat requirements of reptiles in British Columbia. For some species, little information is currently available, as noted in regional wildlife planning documents. Information from future studies and field work can be incorporated into the wildlife habitat handbooks to update and refine existing knowledge.

[1] also called species narratives or species profiles in other reports

1.1 Annotated Format of Species Notes

All species notes follow the same format, with information arranged under the following categories:

Taxonomy: each species note is headed by the common name, scientific name and taxonomic code, taken from Campbell and Harcombe (1985).

Synonyms: common names used in Gregory and Campbell (1984) are also given, since this reference may be used for species identification or additional biological information.

Distribution, Seasonality and Abundance: a summary statement of abundance and provincial distribution. Abundance is assessed within suitable habitat and rated subjectively by the terms abundant, common, sparse, and rare. Seasonality (or season of occurrence) is not applicable, since reptile species are all resident.

Habitat Requirements: divided by three main life requisites:

Reproduction: includes information on courtship areas and reproductive sites (nesting or denning).

Feeding: includes information on food habits, foraging substrates and foraging cover.

Special Needs: includes information on roosting/ resting sites, hiding/ escape cover, thermal cover, and hibernation/ aestivation sites.

Within each of these broad categories, habitat requirements are subdivided into habitat classes and specific habitat elements.

Habitat Classes: in some cases, information from the literature allowed only general habitat classes to be used whereas more detailed habitats could be described for other species that have been studied extensively (Harcombe and Lea, in prep.).

Specific Habitat Elements: site-specific factors that enhance a habitat class for use by a particular species.

Figure 1. Location of the Southern Interior Ecoprovince

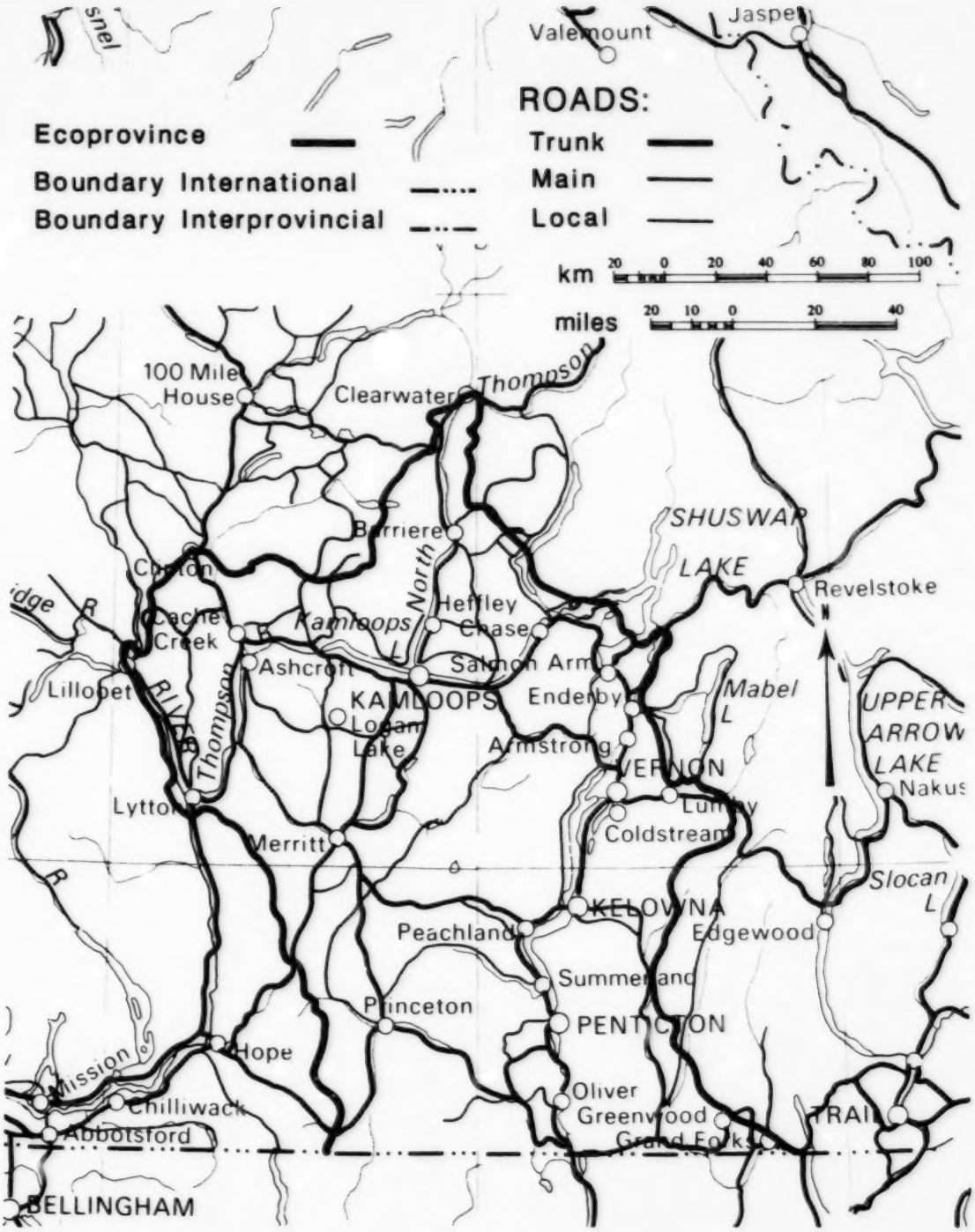


Figure 2. The Southern Interior Ecoprovince.

Includes information on food habits and other details such as a requirement for exposed rocks for sunning or well-drained soil for burrowing.

Habitat Requirements - Pattern: when necessary, this section is used to describe the relationship between the various habitat requirements when more than one habitat is required. For example, a species may forage in lowland wet meadows but require nearby shrub cover for hiding.

Territory/Home Range: includes information on territory and home range sizes, when known, sometimes stratified by age and/or sex class. Territory is defined as part of the home range defended against other species or members of the same species. Home range is the area covered by an individual animal carrying out its life requisites.

Activity and Movement Patterns: includes daily and seasonal activity patterns, migration, and juvenile dispersal. Status: includes a designation (not in jeopardy, special, threatened, endangered, or indeterminate) based on Munro and Low (1979) and Orchard (1984), and legal status. If no legal status is mentioned, the species is not protected by the current laws.

Other: miscellaneous comments relating to niche, relationship to other vertebrates, specific management recommendations, etc.

Selected References: a short list of references, for additional or more detailed information.

Distribution Maps: accompany each species note and show the approximate provincial distribution. Maps were based primarily on *Amphibians and Reptiles of B.C.: An Ecological Review* (Orchard 1984).

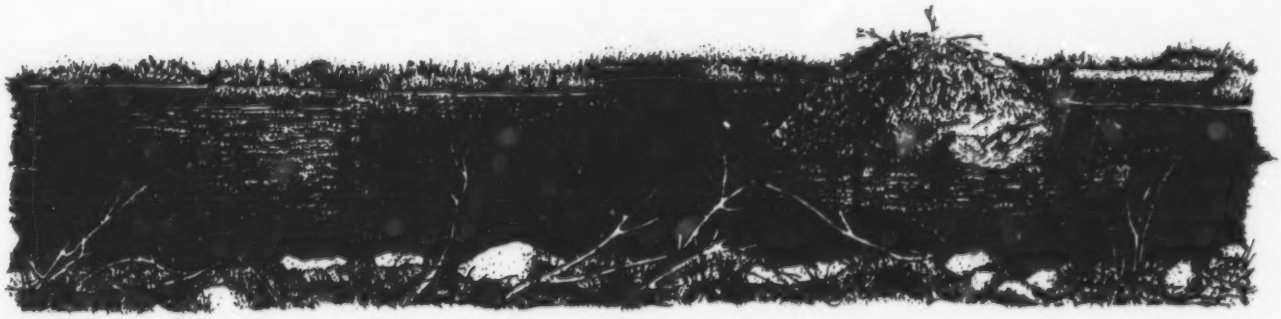
The Royal British Columbia Museum is undertaking a vertebrate atlas program that will provide up-to-date information on the life history and distribution of all British Columbia reptiles. This information will be incorporated into future wildlife habitat handbooks.

Finally, a glossary (Appendix 5.3) is provided to define some of the terms used in the reptile species notes.

2
Species Notes

2.0 SPECIES NOTES

Reptiles are often associated with the sunny environments of tropical forests and deserts. Consequently, it is not surprising that in British Columbia the greatest species density of reptiles occurs in the Thompson and Okanagan Valleys of the Southern Interior Ecoprovince. The Okanagan Valley, south of Penticton, is particularly intriguing to herpetologists because of the likelihood that species new to the province may be revealed in that area; or that a population of the Short-horned Lizard (*Phrynosoma douglassi*), which has not been recorded in this province for at least 88 years, will be rediscovered. Several species of reptiles are known to range to within a few kilometres south of the Canada-United States Border at Osoyoos. The recent finding of a Night Snake (*Hypsiglena torquata*) at Kaleden clearly demonstrates that small, cryptically coloured reptiles are quite adept at avoiding detection even by herpetologists, although, in fairness to herpetologists, the region has never been properly surveyed for reptiles.



Painted Turtle
CHPI
Chrysemys picta (Sneider)
[Western Painted Turtle]

Distribution, Seasonality, and Abundance

Native yearlong resident. Generally distributed across the southern third of the province, including Texada and Vancouver Islands. The greatest population densities occur in the dry valleys of the Thompson, Okanagan, and Kootenay valleys.

Habitat Requirements - Reproduction

HABITAT CLASSES: Courtship and mating occur in the shallow water of permanent lakes and ponds. Sun-exposed beaches and banks adjacent to the water's edge are used for nesting. Hatchlings overwinter on land in the nest.

SPECIFIC HABITAT ELEMENTS: The nests are dug into coarse, sandy terrestrial substrates, at distances that range from a few metres to hundreds of metres from the lake shore.

Habitat Requirements - Feeding

HABITAT CLASSES: Feeds in fresh water; forages on the bottom of lakes and ponds, generally at depths of less than 3 metres.

SPECIFIC HABITAT ELEMENTS: Algae, moss, *Lobelia*, turtles, snails, mussels, dragonflies, crickets, bugs, caterpillars, flies, beetles, rose bugs, wasps, ants, and trout fry have all been recorded in the diet.

Habitat Requirements - Special Needs

SPECIFIC HABITAT ELEMENTS: Offshore emergent boulders and fallen logs in sunny locations serve as basking sites during the active season. Hibernation is passed in the mud floor of the lake or pond.

Habitat Requirements - Pattern

Requires suitable nesting areas in close proximity to aquatic habitat.

Territory/Home Range

Unknown.

Activity and Movement Patterns

Diurnal. Hibernates in the water. Nests on land. Hatchlings overwinter in the nest.

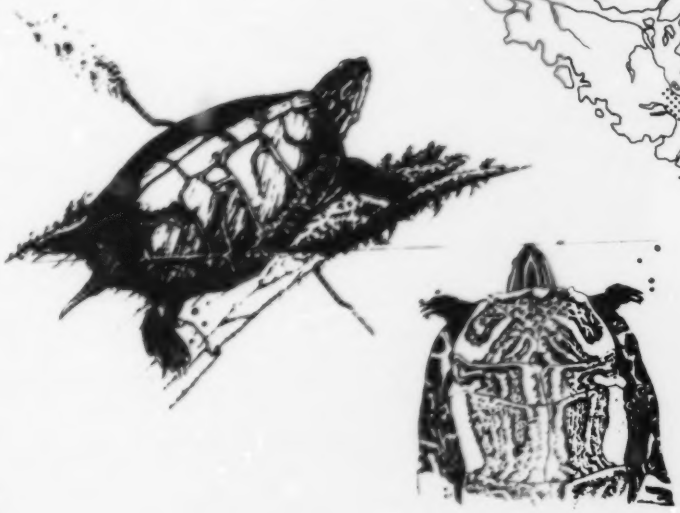
Status

Special (Orchard 1984). No official legal status.

Selected References

Ernst 1971; Ernst and Barbour 1972; Holland 1937; Orchard 1984; Thacker 1924.

Painted Turtle



Northern Alligator Lizard
GECO
Gerrhonotus coeruleus
(Wiegmann)

Distribution, Seasonality, and Abundance

Native yearlong resident. Generally distributed across southern part of the province. Locally abundant in some parts within its range.

Habitat Requirements - Reproduction

HABITAT CLASSES: Mating occurs at or near the entrance to the hibernaculum and the female remains in that general vicinity until she gives birth. The hibernaculum is usually a rock fissure situated in a well-drained and sun-exposed rocky area or forest opening.

SPECIFIC HABITAT ELEMENTS: Rock fissures, rock outcrops and forest clearings.

Habitat Requirements - Feeding

HABITAT CLASSES: Forages on the ground in well-drained, sun-exposed forest clearings, and on talus slopes.

SPECIFIC HABITAT ELEMENTS: Beetles, grasshoppers, crickets, bugs, aphids, and spiders have been recorded in the diet.

Habitat Requirements - Special Needs

SPECIFIC HABITAT ELEMENTS: Hibernates below ground in rock fissures or beneath surface debris. The entrance to the hibernaculum is usually sun-exposed. Substrates that have good sun exposure and warm quickly, such as wind sheltered rock surfaces, are vital to this species.

Territory/Home Range

Unknown.

Activity and Movement Patterns

Diurnal. Hibernates.

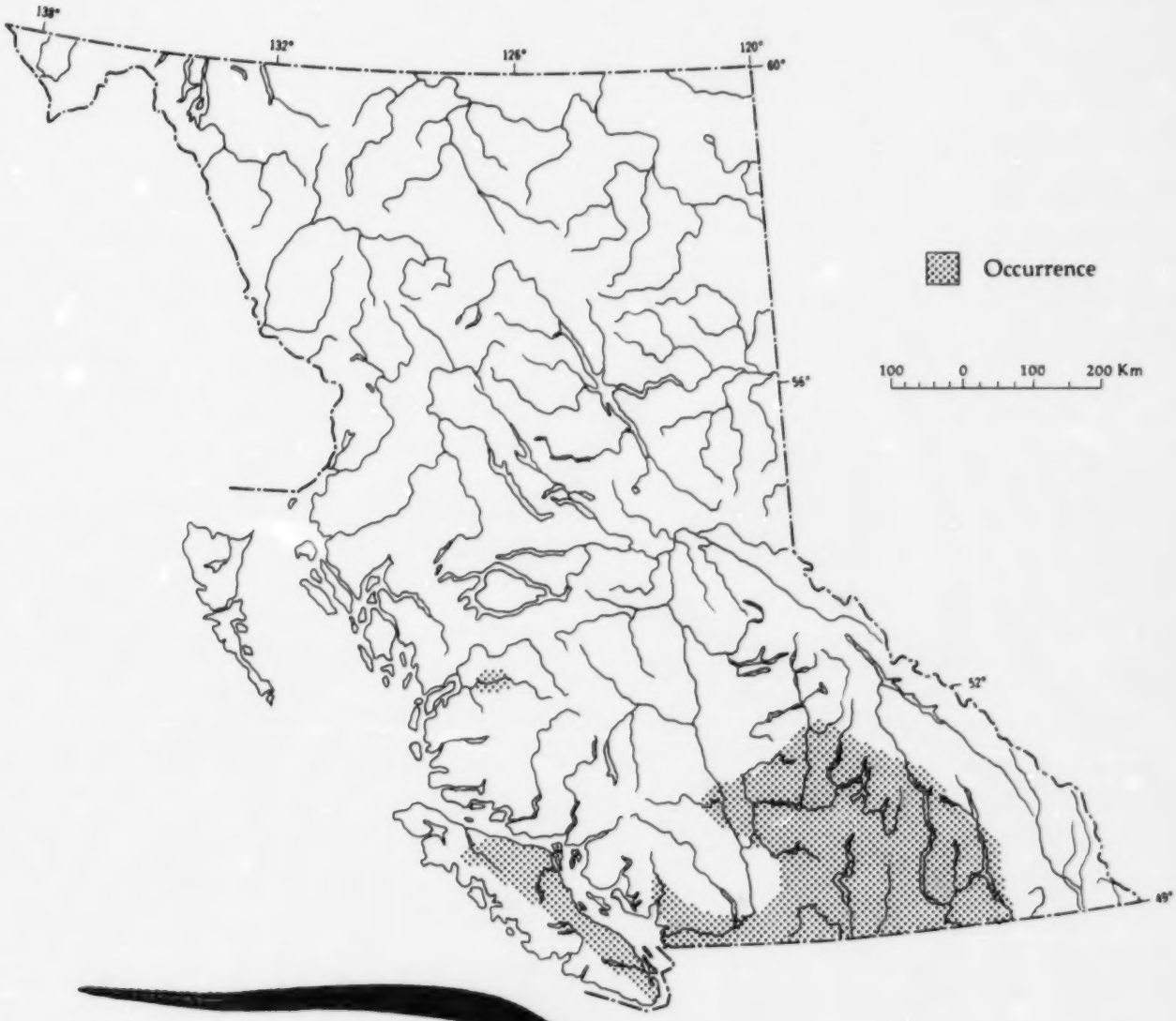
Status

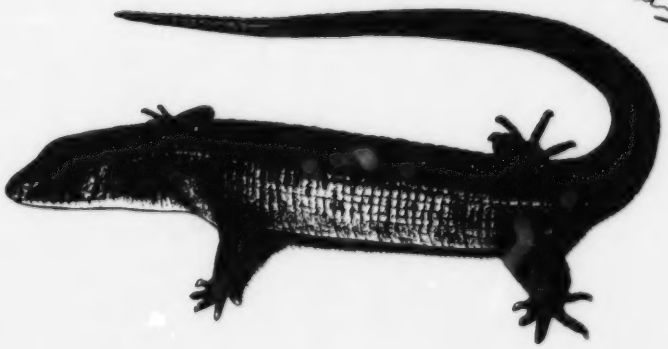
Not in jeopardy (Orchard 1984). No official legal status.

Selected References

Lais 1976; Orchard 1984; Stebbins 1954.

Northern Alligator Lizard





Short-horned Lizard
PHDO
Phrynosoma douglassi (Bell)

Distribution, Seasonality, and Abundance

Recorded only for Osoyoos at the extreme southern Okanagan Valley. Has not been recorded in this province in over 80 years.

Habitat Requirements - Reproduction

HABITAT CLASSES: Viviparous. Mating occurs at spring emergence in hot, dry terrain with fine, loose, well-drained soils. Females carry the embryos to term.

Habitat Requirements - Feeding

HABITAT CLASSES: Forages on the ground in relatively open areas with fine, loose, well-drained soils. Sagebrush, grasses, and rocks provide cover.

SPECIFIC HABITAT ELEMENTS: Ants, grasshoppers, beetles, insect larvae, butterflies, caterpillars, spiders, and snails have been recorded in the diet. Most of the species in this genus feed primarily on ants.

Habitat Requirements - Special Needs

SPECIFIC HABITAT ELEMENTS: Digs just below the surface in fine, loose well-drained substrates to conceal itself at night and to retreat from uncomfortably high or low temperatures.

Territory/Home Range

Unknown.

Activity and Movement Patterns

Diurnal. Hibernates.

Status

Indeterminate (Orchard 1984). Protected wildlife under the British Columbia Wildlife Act (1982).

Other

Threatened or endangered over much of its United States range.

Selected References

Nussbaum *et al.* 1983; Orchard 1984; Stebbins 1954.

Short-horned Lizard

Western Skink
EUSK
Eumeces skiltonianus (Baird and Girard)

Distribution, Seasonality, and Abundance

Native yearlong resident. Occurs in the Kootenay and southern Okanagan Valleys, and may also be found on Vancouver Island.

Habitat Requirements - Reproduction

HABITAT CLASSES: Mating occurs in spring shortly after emerging from hibernation sites in sun-exposed talus slopes and rocky clearings.

SPECIFIC HABITAT ELEMENTS: Eggs are deposited underground beneath flat rocks, bark, or within rotting logs.

Habitat Requirements - Feeding

HABITAT CLASSES: Feeds on the ground at or near to sites of concealment. Generally forages through a cover of grass or beneath low open shrubberies.

SPECIFIC HABITAT ELEMENTS: A wide range of terrestrial invertebrates have been recorded in the diet. These include beetles, grasshoppers, crickets, leaf hoppers, moths, caterpillars, spiders, and sow bugs (pill bugs).

Habitat Requirements - Special Needs

SPECIFIC HABITAT ELEMENTS: Hibernates below ground in rock fissures or beneath surface debris. Substrates that have good sun exposure and warm quickly, such as wind sheltered rock surfaces, are preferred.

Territory/Home Range

Unknown.

Activity and Movement Patterns

Diurnal. Hibernates.

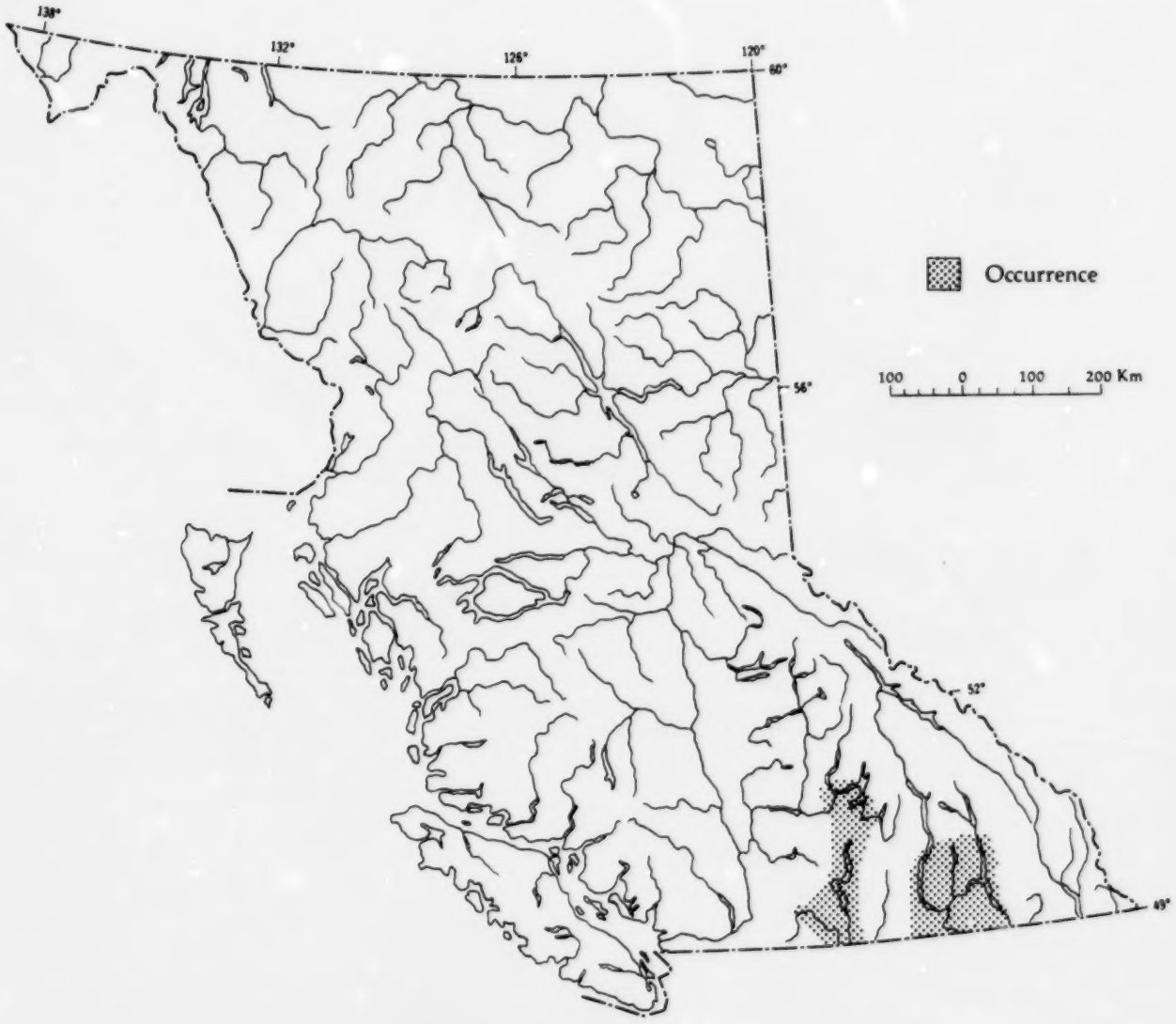
Status

Not in jeopardy (Orchard 1984). No official legal status.

Selected References

Orchard 1984; Stebbins 1954; Taylor 1935.

Western Skink



Rubber Boa
CHBO
Charina bottae (Blainville)
[Rocky Mountain Rubber Boa, Pacific Rubber Boa]

Distribution, Seasonality, and Abundance

Native yearlong resident. Generally distributed in the Lower Fraser, Thompson, Okanagan, Columbia, and Kootenay Valleys.

Habitat Requirements - Reproduction

HABITAT CLASSES: Mating occurs shortly after emergence from hibernation. Gravid females probably restrict subsequent activity to the vicinity of the hibernaculum. Viviparous. Embryos are carried by the female to term.

Habitat Requirements - Feeding

HABITAT CLASSES: Foraging activity appears to focus primarily on active rodent burrows in a variety of habitats, often in the vicinity of rivers and streams.

SPECIFIC HABITAT ELEMENTS: Mice and voles have been removed from the stomachs of field preserved rubber boas. In addition to rodents, captive rubber boas have taken fish, lizards, and garter snakes.

Habitat Requirements - Special Needs

SPECIFIC HABITAT ELEMENTS: Thermally buffered, usually subterranean, hibernation sites are required. Hibernates and retreats to rock fissures, rodent burrows, stumps, decaying logs, under bark, or beneath rocks.

Territory/Home Range

Unknown.

Activity and Movement Patterns

After emerging from hibernation, rubber boas may first warm themselves in broad daylight; thereafter, most surface activity is conducted in the evening or at night.

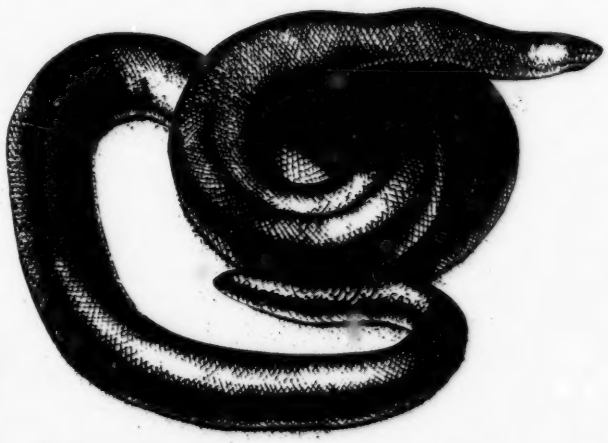
Status

Special (Orchard 1984). Protected wildlife under the British Columbia Wildlife Act (1982).

Selected References

Orchard 1984; Stebbins 1954; Stewart 1977.

Rubber Boa



Racer
COCO
Coluber constrictor Linnaeus
[Western Yellow-bellied Racer]

Distribution, Seasonality, and Abundance

Native yearlong resident. Restricted to and generally distributed within the Pondrosa Pine - Bunchgrass biogeoclimatic zone.

Habitat Requirements - Reproduction

HABITAT CLASSES: Mating occurs on the ground in sagebrush steppe and open ponderosa pine forest.

SPECIFIC HABITAT ELEMENTS: Racers deposit their eggs in loose soil, beneath flat stones, or in decaying wood on slopes with relatively open southern exposure.

Habitat Requirements - Feeding

HABITAT CLASSES: Racers forage primarily on the ground, and occasionally move into the branches of low vegetation, within sagebrush steppe and ponderosa pine parkland.

SPECIFIC HABITAT ELEMENTS: Subspecies *mormon* is recorded as feeding on grasshoppers, crickets, cicadas, caterpillars, Pacific treefrogs, lizards, snakes, voles, and bats. Insects probably form the largest part of the diet.

Habitat Requirements - Special Needs

HABITAT CLASSES: Warm, sunny, well-drained, open habitat for thermoregulation.

Territory/Home Range

Unknown.

Activity and Movement Patterns

Diurnal. Hibernates. Can move easily through bushes and trees, although, generally remains on the ground.

Status

Not in jeopardy (Orchard 1984). Protected wildlife under the British Columbia Wildlife Act (1982).

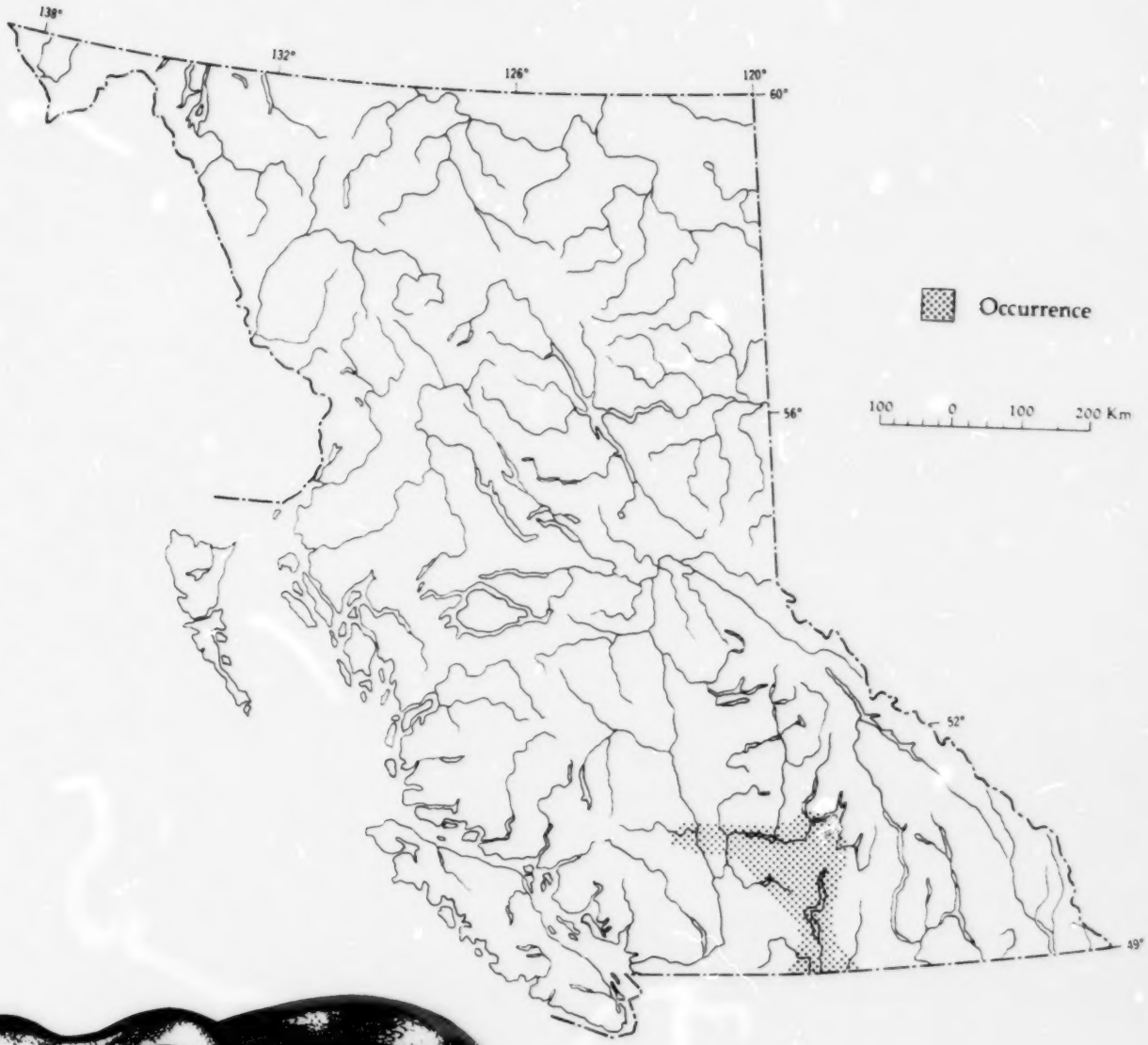
Other

Commercial harvest and habitat destruction has reduced populations elsewhere in North America.

Selected References

Fitch 1963; Orchard 1984; Stebbins 1954; Wilson 1978.

Racer



Night Snake
HYTO
Hypsiglena torquata Gunther
[Desert Night Snake]

Distribution, Seasonality, and Abundance

Only one specimen collected in this province. Intensive searching in the southern Okanagan Valley is required to verify the existence of resident British Columbia populations.

Habitat Requirements - Reproduction

HABITAT CLASSES: The British Columbia specimen was collected at a rattlesnake den in rocky, open terrain characteristic of both species. Mating occurs at emergence from hibernation den.

SPECIFIC HABITAT ELEMENTS: Oviparous. Deposits eggs in loose soil, beneath flat stones, or in decaying wood on slopes with relatively open southern exposure.

Habitat Requirements - Feeding

HABITAT CLASSES: Forages on the ground on talus slopes, rocky open clearings, and sagebrush steppe.

SPECIFIC HABITAT ELEMENTS: Lizards and frogs have been recorded in the diet of this species. Night snakes produced a mild toxin that aids in subduing their prey.

Habitat Requirements - Special Needs

HABITAT CLASSES: Warm, sunny, well-drained, open habitat for thermoregulation.

SPECIFIC HABITAT ELEMENTS: Require subterranean retreats for hibernation and suitable locations to deposit eggs.

Territory/Home Range

Unknown.

Activity and Movement Patterns

Generally active in the evening or at night. Hibernates.

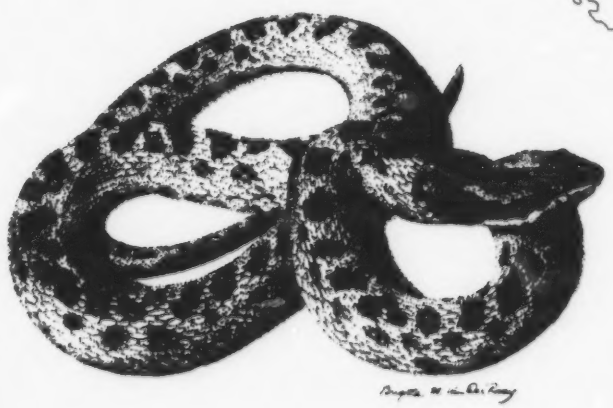
Status

Indeterminate (Orchard 1984). Protected wildlife under the British Columbia Wildlife Act (1982).

Selected References

Nussbaum *et al.* 1983; Orchard 1984; Stebbins 1954; Tanner 1944.

Night Snake



Gopher Snake
PIME
Pituophis melanoleucus Daudin
[Great Basin Gopher Snake, Pacific Gopher Snake]

Distribution, Seasonality, and Abundance

Native yearlong resident. Ranges throughout the Ponderosa Pine - Bunchgrass biogeoclimatic zone. A western race may occur on the Gulf Islands in the Strait of Georgia (Carl 1963).

Habitat Requirements - Reproduction

HABITAT CLASSES: Mating occurs in sagebrush steppe and open ponderosa pine forests, on the ground in the vicinity of the hibernaculum probably at the time of spring emergence.

SPECIFIC HABITAT ELEMENTS: Deposits eggs in loose soil, beneath flat stones, or in decaying wood on slopes with relatively open southern exposure.

Habitat Requirements - Feeding

HABITAT CLASSES: Can climb and is occasionally encountered in trees and shrubs; however, most foraging is on the ground within sagebrush steppe and ponderosa pine habitats.

SPECIFIC HABITAT ELEMENTS: Lizards, garter snakes, birds and their eggs, rabbits, ground squirrels and various other species of rodents are recorded in the diet.

Habitat Requirements - Special Needs

SPECIFIC HABITAT ELEMENTS: Thermally buffered, usually subterranean, hibernation sites are required. Hibernate and retreat to rock fissures, rodent burrows, stumps, decaying logs, under bark, or beneath rocks.

Territory/Home Range

Unknown.

Activity and Movement Patterns

Diurnal to crepuscular. Hibernates. Can climb trees, but generally remains on the ground.

Status

Special (Orchard 1984). Protected wildlife under the British Columbia Wildlife Act (1982).

Selected References

Carl 1963; Orchard 1984; Stebbins 1954; Stull 1940.

Gopher Snake

Western Terrestrial Garter Snake
THEL
Thamnophis elegans Baird and Girard
[Wandering Garter Snake]

Distribution, Seasonality, and Abundance

Native yearlong resident. Widely distributed in coastal zones and along the river valleys of the Interior.

Habitat Requirements - Reproduction

HABITAT CLASSES: Mating occurs shortly after emergence from hibernation and less commonly in the fall. Females carry the embryos to term. Habitat for mating activity is highly variable, but is usually at a sunny location adjoining aquatic foraging habitat, such as beaches, lake shores, and river banks.

Habitat Requirements - Feeding

HABITAT CLASSES: Ranges freely between terrestrial and aquatic foraging. Littoral and foreshore habitats such as lakes, ponds, swamps, marshes, streams, rivers, estuaries, and intertidal zones are important foraging habitats for this species; these areas support the richest prey densities and, therefore, support larger garter snake populations.

SPECIFIC HABITAT ELEMENTS: The diet is extraordinarily varied for a snake. Prey items may be vertebrate or invertebrate, freshwater or marine, endothermic or ectothermic. On land they feed mostly on slugs, amphibians, and small rodents; shrews are taken infrequently. In seabird nesting colonies they feed extensively on hatchling birds. Ind the intertidal zone they forage for tidepool fishes and an enormous array of other marine organisms.

Habitat Requirements - Special Needs

SPECIFIC HABITAT ELEMENTS: In the Interior, where hundreds of individuals overwinter communally, the hibernaculum is generally a deep rock fissure with good exposure to the sun at its entrance. On the coast, where winter temperatures are less extreme, individuals are more dispersed and hibernacula are shallow subterranean cavities.

Territory/Home Range

Unknown.

Activity and Movement Patterns

Usually diurnal. Hibernates. Ranges freely between aquatic and terrestrial habitat. Strongly associated with fresh water.

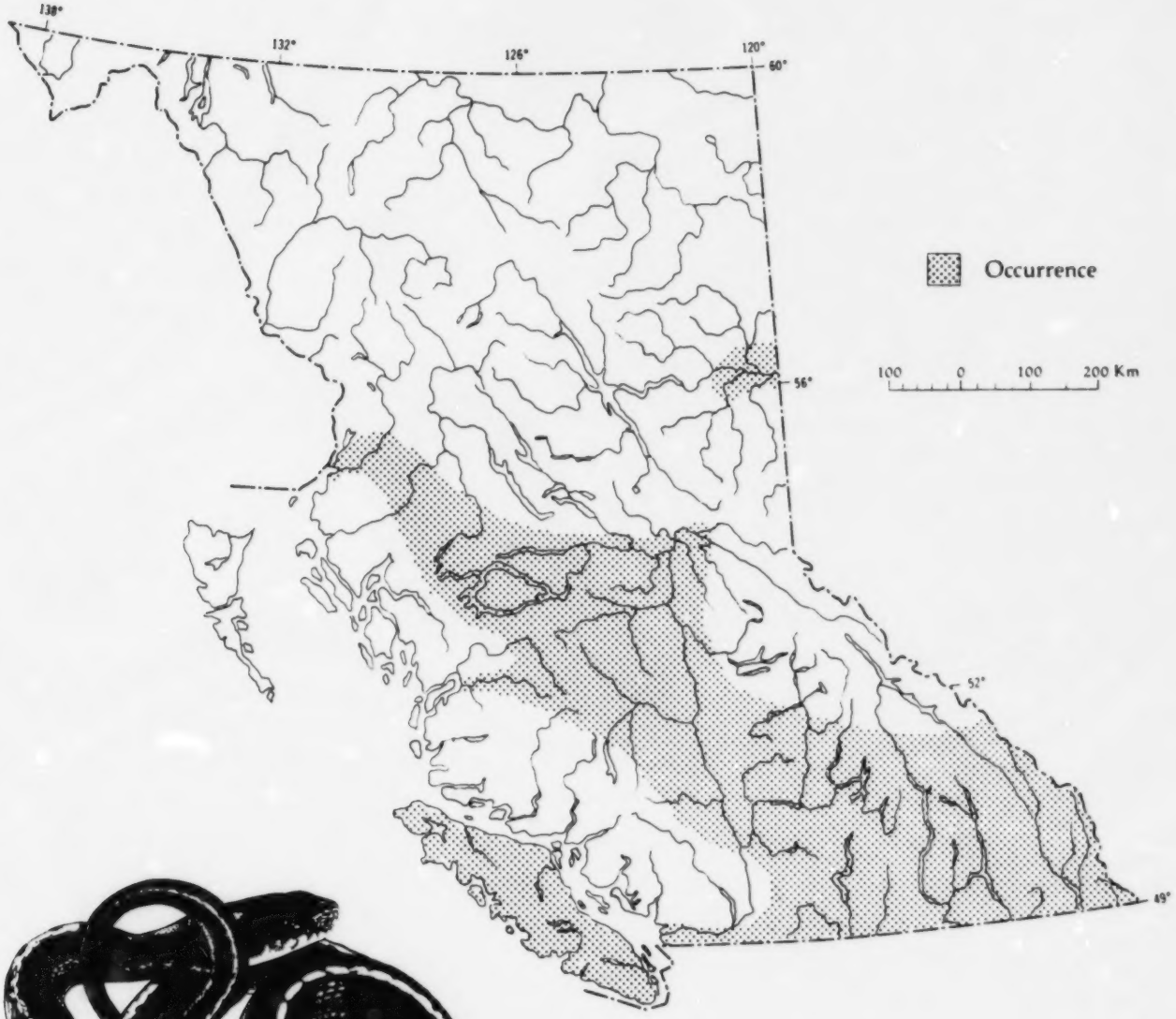
Status

Not in jeopardy (Orchard 1984). No official legal status.

Selected References

Fitch 1983; Gregory 1978, 1984; Orchard 1984; Stebbins 1954.

Western Terrestrial Garter Snake



Common Garter Snake
THSI
Thamnophis sirtalis Linnaeus
[Red-sided Garter Snake, Valley Garter Snake, Puget Sound Red-sided Garter Snake]

Distribution, Seasonality, and Abundance

Native yearlong resident. Generally distributed in the coastal zones and river valleys of the province.

Habitat Requirements - Reproduction

HABITAT CLASSES: Mating occurs in the late fall or shortly after emergence from hibernation. Females carry the embryos to term. Habitat for mating activity is highly variable, but is usually at a sunny location adjoining aquatic foraging habitat such as beaches, lake shores, and river banks.

Habitat Requirements - Feeding

HABITAT CLASSES: Ranges freely between terrestrial and aquatic foraging. Littoral and foreshore habitats associated with lakes, ponds, swamps, marshes, streams, rivers, estuaries, and intertidal zones are important foraging habitats for this species; these areas support the richest prey densities and, therefore, support larger garter snake populations.

SPECIFIC HABITAT ELEMENTS: Leeches, earthworms, slugs, fish (fresh water and marine), amphibians, fledgling birds, and small mammals are recorded in the diet.

Habitat Requirements - Special Needs

SPECIFIC HABITAT ELEMENTS: In the Interior, where hundreds of individuals overwinter communally, the hibernaculum is generally a deep rock fissure with good exposure to the sun at its entrance. On the coast where winter temperatures are less extreme individuals are more dispersed and hibernacula are shallow subterranean cavities.

Territory/Home Range

Unknown.

Activity and Movement Patterns

Usually diurnal. Hibernates. Ranges freely between aquatic and terrestrial habitat. Strongly associated with fresh water.

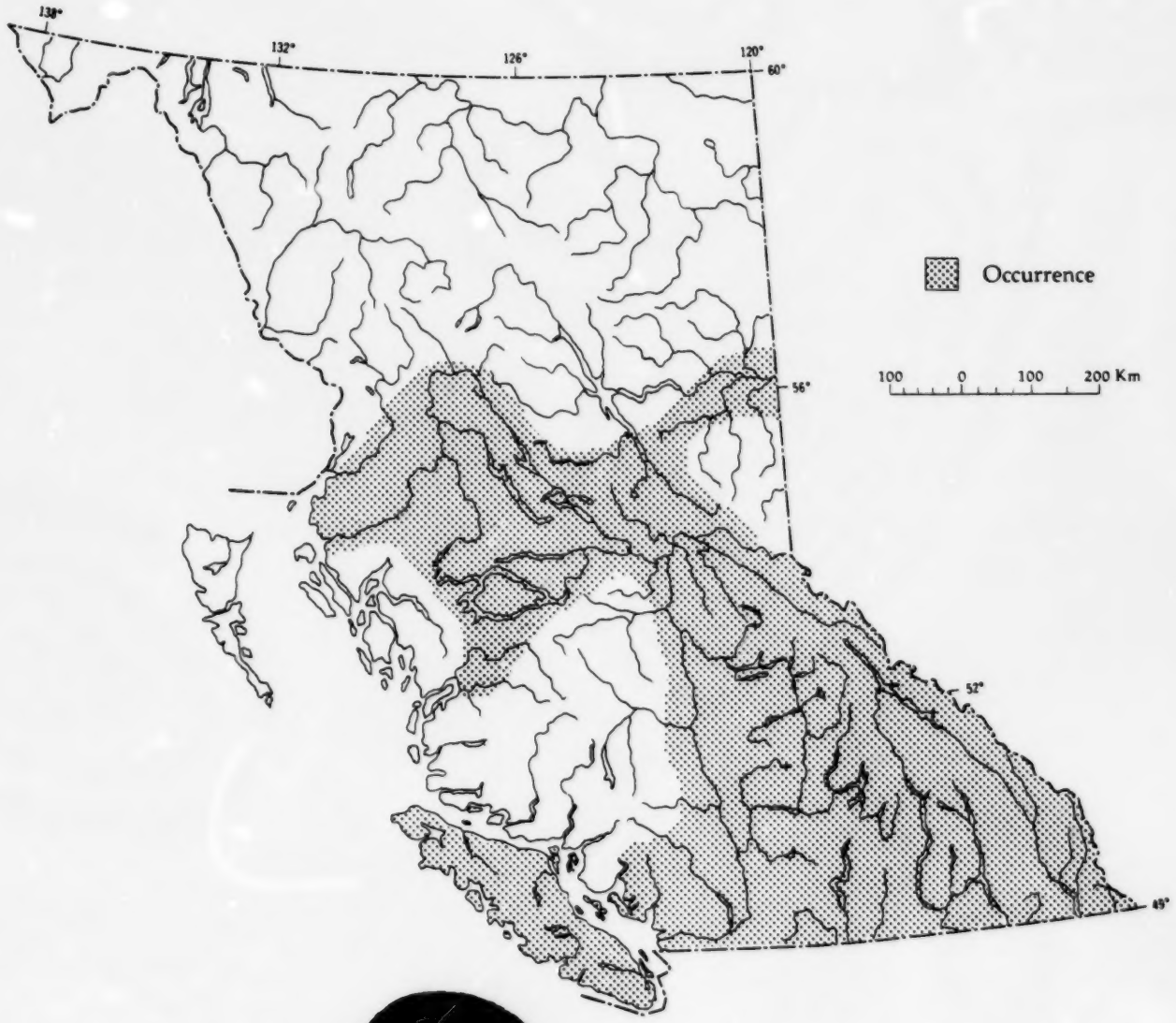
Status

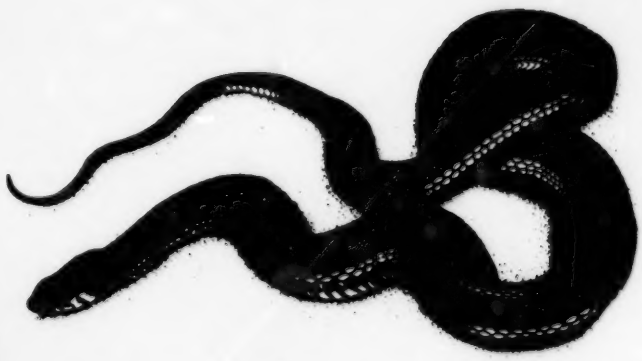
Not in jeopardy (Orchard 1984). No official legal status.

Selected References

Anderson 1977; Fitch 1980; Gregory 1978, 1984; Orchard 1984; Stebbins 1954.

Common Garter Snake





Western Rattlesnake
CRVI
Crotalus viridis Rafinesque
[Northern Pacific Rattlesnake]

Distribution, Seasonality, and Abundance

Native yearlong resident. Distribution restricted to the Ponderosa pine - Bunchgrass biogeoclimatic zone.

Habitat Requirements - Reproduction

HABITAT CLASSES: Mating generally occurs on rocky slopes in sagebrush steppe and open ponderosa pine forest at den sites. Viviparous. Gravid females conceal themselves in abandoned rodent burrows during their reproductive year (triennial cycle).

Habitat Requirements - Feeding

HABITAT CLASSES: Forage in rocky terrain of variable aspect and slope, from rock bluffs to rubble piles in open ponderosa pine forest.

SPECIFIC HABITAT ELEMENTS: Foraging activity concentrates mostly on rodent burrows. Adult western rattlesnakes prey on small mammals such as mice, voles, pocket gophers, wood rats, squirrels, chipmunks, muskrats, ground squirrels, young marmots, and young rabbits. Occasionally birds such as sparrows and larks are taken. Very young snakes are known to prey on newborn voles and shrews.

Habitat Requirements - Special Needs

HABITAT CLASSES: Warm, sunny, well-drained, open habitat for thermoregulation.

SPECIFIC HABITAT ELEMENTS: Rock fissures and caves are required for overwintering.

Territory/Home Range

Unknown.

Activity and Movement Patterns

After emerging from hibernation, they will warm themselves in sunlight; thereafter, they conduct most surface activity in the early evening or at night while the substrate remains warm.

Status

Threatened (Orchard 1984). Protected wildlife under the British Columbia Wildlife Act (1982).

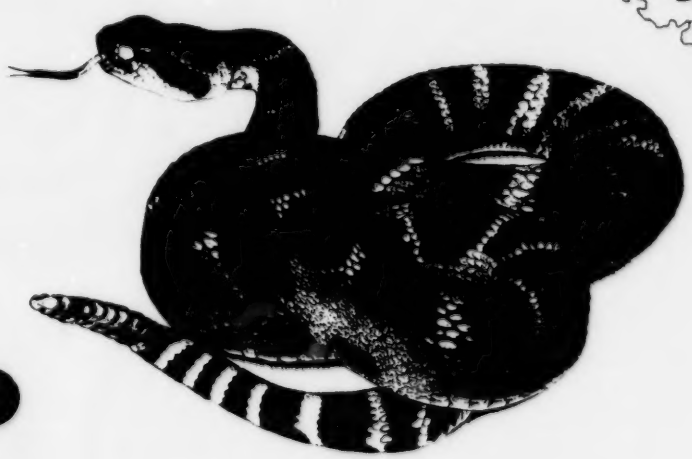
Other

This species has been systematically exterminated from areas adjacent to settlements and is frequently killed whenever it is encountered. A market exists for the meat, leather, and venom, but commercial exploitation does not yet threaten British Columbia rattlesnake populations. Populations at northern latitudes are especially vulnerable to excessive commercial exploitation because they congregate in large numbers to overwinter in communal dens. Collectors need only arrive at a den site at spring emergence to harvest hundreds of snakes at one time.

Selected References

Klauber 1972; Macartney 1985; Orchard 1984; Preston 1964; Stebbins 1954.

Western Rattlesnake



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5
Appendices

5. APPENDICES

Appendix 5.1. Taxonomic Listing of Reptiles

The following taxonomic list attempts to follow an acceptable phylogenetic sequence. However, because of lack of standard agreement among herpetologists, all taxons of reptiles are listed alphabetically within orders.

CLASS: REPTILIA (Reptiles)

ORDER: TESTUDINES (Turtles)

FAMILY: TESTUDINIDAE (Fresh-water Turtles)

Painted Turtle	*Chrysemys picta*

ORDER: SQUAMATA (Lizards)

FAMILY: ANGUIDAE (Alligator Lizards)

Northern Alligator Lizard	*Gerrhonotus coeruleus*

FAMILY: IGUANIDAE (Iguanids)

Short-horned Lizard	*Phrynosoma douglassi*

FAMILY: SCINCIDAE (Skinks)

Western Skink	*Eumeces skiltonianus*

ORDER: SERPENTES (Snakes)

FAMILY: BOIDAE (Boas)

Rubber Boa	*Charina bottae*

FAMILY: COLUBRIDAE (Harmless Snakes)

Racer	*Coluber constrictor*
Night Snake	*Hypsiglena torquata*
Gopher Snake	*Pituophis melanoleucus*
Western Terrestrial Garter Snake	*Thamnophis elegans*
Common Garter Snake	*Thamnophis sirtalis*

FAMILY: VIPERIDAE (Vipers)

Western Rattlesnake	*Crotalus viridis*

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Appendix 5.3.
Glossary

Crepuscular: The periods of dusk before sunrise and after sunset.

Ectotherm: An organism that regulates the body temperature chiefly by means of outside sources of heat, such as through basking in sunlight.

Endotherm: An organism that regulates body temperature by means of internal intrinsic sources of heat, as do mammals and birds.

Gravid: The condition of being pregnant or egg bearing.

Hibernaculum: The habitat where terrestrial animals overwinter.

Invertebrate: An animal lacking a spinal column, e.g. insects.

Nocturnal: Refers to night time.

Oviparous: Producing young by means of eggs which are released from the ovary, provided with membranes and/or a shell by oviducal lining, and almost immediately expelled from the body (fertilized internally in reptiles, externally in amphibians). Entire embryonic development takes place outside female.

Term: The completion of the normal period of gestation.

Thermoregulation: Behaviours associated with regulation of body temperatures, e.g. basking.

Toxin: A poison produced by an organism.

Viviparous: Refers to an animal in which the embryo develops within its body and which produces fully formed offspring at Term.

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